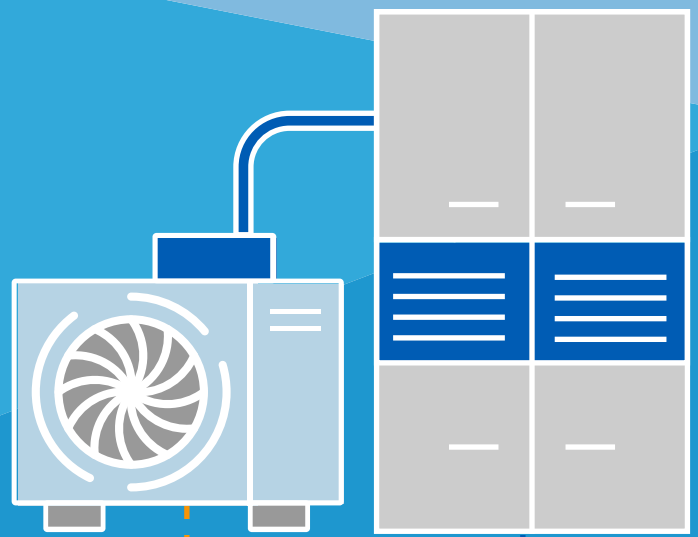


Why energy efficiency is a critical factor when selecting a new refrigerant solution

Since 2015, the European F-Gas Regulation has been pushing retailers to replace their hydrofluorocarbon (HFC) refrigerants with new, lower global warming potential (GWP) alternatives for long-term sustainability.



Did you know?

Indirect emissions resulting from the electricity consumption of refrigeration systems are actually a far greater contributor to climate change than the GWP of the refrigerant itself,* making energy efficiency a vital factor when selecting a low GWP solution.

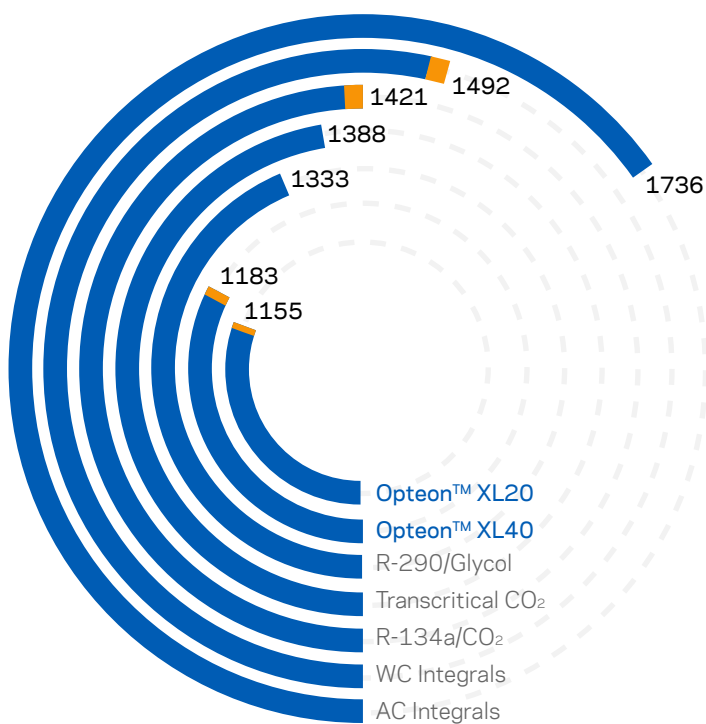


Direct Emissions
Global warming potential (GWP)



Indirect Emissions
System performance, energy efficiency

Total Emissions Over 10 Years for Various Refrigeration Technologies



■ 10-yr Direct Emissions (TCO_{2e}) ■ 10-yr Indirect Emissions (TCO_{2e})

Data from standard-sized supermarket in Leicester, UK (~2000 m² sales area with design loads of 160 kW medium temperature/30 kW low temperature). Data for Sevilla, Spain also available in the white paper.



Small corner store

<300 m²



Convenience store



Discounter



Supermarket



Hypermarket

>2,000 m²

For store sizes between 300-2,000 m², located between Leicester (UK) and Sevilla (SP), Opteon™ XL HFO refrigerants offer total emissions up to:

20% LOWER

than those used in a carbon dioxide (CO₂) system

15% LOWER

than that of a propane (R-290/Glycol) system

When choosing a future refrigeration technology based on impact to climate change, total emissions—both direct/GWP and indirect/energy efficiency—have to be a top consideration. Opteon™ XL A2L hydrofluoroolefin (HFO) refrigerants from Chemours are the ideal long-term solution to maximize environmental and economic benefits.

Opteon™ XL refrigerants compared to current HFC refrigerants:

Equal cooling performance
Superior energy efficiency
Lower global warming potential
Similar ease of installation and maintenance
Long-term sustainability and compliant with regulations

Opteon™ XL refrigerants compared to other low GWP alternatives:

Superior energy efficiency
Lower total emissions
Lower life cycle cost
Lower flammability than hydrocarbons
Lower operating pressure than CO ₂



See the proof. Read about the independent comparison study for small- and standard-sized supermarkets conducted by Wave Refrigeration in our new white paper, [The Path to Reducing Climate Change Emissions from Commercial Refrigeration Applications](#).



Opteon™

*To calculate the indirect emissions for each technology, the energy consumption figures were then converted to CO₂ equivalent emissions using CO₂ Factor kgCO_{2e}/kWh values. For the refrigerants with a GWP of >10, the direct emissions were calculated using the refrigerant system charge with an annual loss rate for each technology assumed.